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STRUCTURE FILE UPDATES: 1 SEP 2009 HIGHEST RN 1179012-51-1
DICTIONARY FILE UPDATES: 1 SEP 2009 HIGHEST RN 1179012-51-1

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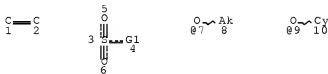
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<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d que stat 15
L3 STR



VAR G1=OH/7/9
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 8
GGCAT IS UNS AT 10
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L5 91115 SEA FILE=REGISTRY SSS FUL L3

100.0% PROCESSED 149215 ITERATIONS 91115 ANSWERS
SEARCH TIME: 00.00.02

=> d his nofile

(FILE 'HOME' ENTERED AT 11:12:24 ON 02 SEP 2009)

FILE 'HCAPLUS' ENTERED AT 11:12:41 ON 02 SEP 2009
L1 1 SEA SPE=ON ABB=ON PLU=ON US20050118477/PN

D SCA
D IALL
SEL RN

L2 FILE 'REGISTRY' ENTERED AT 11:13:57 ON 02 SEP 2009
2 SEA SPE=ON ABB=ON PLU=ON (596130-67-5/BI OR 596130-68-6/BI)
D SCA

L3 FILE 'LREGISTRY' ENTERED AT 11:23:33 ON 02 SEP 2009
STR

L4 FILE 'REGISTRY' ENTERED AT 11:27:57 ON 02 SEP 2009
D L2 IDE 1
50 SEA SSS SAM L3
L5 91115 SEA SSS FUL L3
SAV TEMP PEZ387/A L5
L6 2 SEA SPE=ON ABB=ON PLU=ON L2 AND L5
L7 1865 SEA SPE=ON ABB=ON PLU=ON L5 AND IDS/CI

L8 FILE 'HCAPLUS' ENTERED AT 11:56:54 ON 02 SEP 2009
20179 SEA SPE=ON ABB=ON PLU=ON L5/P
L9 QUE SPE=ON ABB=ON PLU=ON ELECTROLYT?
L10 1058 SEA SPE=ON ABB=ON PLU=ON L5(L)L9
L11 1 SEA SPE=ON ABB=ON PLU=ON L2
L12 609 SEA SPE=ON ABB=ON PLU=ON L8 AND L9
L13 QUE SPE=ON ABB=ON PLU=ON ?POLYMER?(3A)FILM
L14 QUE SPE=ON ABB=ON PLU=ON (POLYMERIZ? OR POLYMER?(2A)RE
ACT?(3A) (VINYL SULFON? OR VINYL SULPHON? OR VINYL (2A) (SULF
ON? OR SULPHON?))
L15 20 SEA SPE=ON ABB=ON PLU=ON L13 AND L14
L16 6 SEA SPE=ON ABB=ON PLU=ON L15 AND L8
D AN 6
L17 3 SEA SPE=ON ABB=ON PLU=ON L15 AND L12
L18 3 SEA SPE=ON ABB=ON PLU=ON L16 NOT L17
L19 16 SEA SPE=ON ABB=ON PLU=ON L15 AND (PY<=2002 OR
PRY<=2002 OR AY<=2002)
L20 12 SEA SPE=ON ABB=ON PLU=ON L19 NOT (L17 OR L18)

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 12:07:15 ON 02 SEP 2009
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FILE LAST UPDATED: 1 Sep 2009 (20090901/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2009

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2009

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

The ALL, BIB, MAX, and STD display formats in the CA/CAPLUS family of databases have been updated to include new citing references information. This enhancement may impact record import into database management software. For additional information, refer to NEWS 9.

=> d ibib abs hitstr hitind 117 1-3

L17 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2009:918134 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 151:178083

TITLE: Manufacture of cation-exchange membranes, and polymer-electrolyte fuel cells having same membranes as proton-exchange electrolyte membranes

INVENTOR(S): Mizuguchi, Kazuo; Isomura, Takenori; Fukuda, Kenji; Yanagi, Hiroyuki; Kato, Hiroshi; Takei, Toru; Tajima, Hiroshi

PATENT ASSIGNEE(S): Tokuyama Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 21pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2009170350	A	20090730	JP 2008-9293	20080118
PRIORITY APPLN. INFO.:			JP 2008-9293	20080118

AB Title membranes are manufactured by a process including steps of (1) impregnating hydrophobic porous films successively with preliminary impregnant solns. containing vinylsulfonic acid and solvents with solubility parameter 9-17, and solvent-substantially free impregnant solns. containing vinylsulfonic acid, and (2) polymerizing the vinylsulfonic acid. Title membranes, containing polyvinylsulfonic acid in pores of the porous films, show ion-exchange capacity per porosity 6.4-0.3 mmol/g dry resin. Preferably, the preliminary impregnant solns. and impregnant solns. contain crosslinking agents. The membranes show high proton exchange capacity.

IT 936483-71-5P, Triallyl isocyanurate-vinylsulfonic acid

copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(cation exchangers; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)

RN 936483-71-5 HCAPLUS

CN Ethenesulfonic acid, polymer with
1,3,5-tri-2-propen-1-yl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (CA INDEX NAME)

CM 1

CRN 1184-84-5

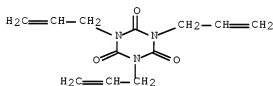
CMF C2 H4 O3 S



CM 2

CRN 1025-15-6

CMF C12 H15 N3 O3



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST cation exchange membrane porous film impregnant
vinylsulfonic acid polymer; direct methanol fuel
cell electrolyte polyvinylsulfonic acid; triallyl
isocyanurate crosslinked polyvinylsulfonic acid proton exchanger
membrane

IT Impregnation
Polymerization

(manufacture of cation-exchange membranes by polymerizing
impregnated vinylsulfonic acid in pores of porous
films)

IT Fuel cell electrolytes
Polyelectrolytes

(manufacture of cation-exchange membranes containing polyvinylsulfonic
acid for polymer-electrolyte fuel cells)

IT Fuel cells
(polymer electrolyte; manufacture of cation-exchange
membranes containing polyvinylsulfonic acid for polymer-
electrolyte fuel cells)

IT Polyisocyanurates

RL: IMF (Industrial manufacture); TEM (Technical or engineered

- material use); PREP (Preparation); USES (Uses)
(polyvinylsulfonic acid-; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)
- IT Cation exchange membranes
(proton-exchange; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)
- IT Crosslinking agents
(triallyl isocyanurate, impregnants containing; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)
- IT 936483-71-5P, Triallyl isocyanurate-vinylsulfonic acid copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(cation exchangers; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)
- IT 1025-15-6, Triallyl isocyanurate
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(crosslinking agents in impregnants; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)
- IT 1184-84-5, Vinylsulfonic acid
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(in impregnants; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)
- IT 9002-88-4, Polyethylene
RL: TEM (Technical or engineered material use); USES (Uses)
(porous films; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)
- IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropanol, uses 107-21-1, Ethylene glycol, uses 109-99-9, THF, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvents in impregnants; manufacture of cation-exchange membranes by polymerizing impregnated vinylsulfonic acid in pores of porous films)

L17 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2007:1234850 HCAPLUS Full-text

DOCUMENT NUMBER: 147:487307

TITLE: Vinyl polymers containing sulfone groups with good film formability and ion exchange capacity for polymer electrolytes, polymer electrolyte membranes, and fuel cells

INVENTOR(S): Hase, Kohei; Kitashoji, Takeru; Tanabe, Susumu

PATENT ASSIGNEE(S): Toyota Jidosha Kabushiki Kaisha, Japan

SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

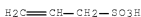
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2007123268	A1	20071101	WO 2007-JP59008	20070419
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 2007284617	A	20071101	JP 2006-115847	20060419
CA 2628237	A1	20071101	CA 2007-2628237	20070419
EP 2011806	A1	20090107	EP 2007-742443	20070419
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS				
US 20090047563	A1	20090219	US 2008-162182	20080725
CN 101426823	A	20090506	CN 2007-80013837	20081017
PRIORITY APPLN. INFO.:			JP 2006-115847	A 20060419
			WO 2007-JP59008	W 20070419
AB The present invention relates to vinyl polymers containing sulfone groups [CH ₂ CH((CH ₂) _n SO ₃ H)], wherein x = 1-20 number and n = 10-10,000 number. Thus, 20.2 M sodium 3-butene-1-sulfonate was polymerized in water at 100° for 10 h using 2,2'-azobis(2-amidinopropane) dihydrochloride to give a polymer.				
IT 50861-80-8F, Sodium allylsulfonate homopolymer 95735-01-6F				
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)				
(vinyl polymers containing sulfone groups with good film formability and ion exchange capacity for polymer electrolytes, polymer electrolyte membranes, and fuel cells)				
RN 50861-80-8 HCAPUS				
CN 2-Propene-1-sulfonic acid, sodium salt (1:1), homopolymer (CA INDEX NAME)				
CM 1				

CRN 2495-39-8
CMF C3 H6 O3 S . Na



RN 95735-01-6 HCAPLUS
CN 3-Butene-1-sulfonic acid, sodium salt (1:1), homopolymer (CA INDEX NAME)

CM 1

CRN 60154-88-3
CMF C4 H8 O3 S . Na



- CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 52
- ST vinyl polymer contg sulfone group film
formability ion exchange; polymer electrolyte membrane
fuel cell; sodium butenesulfonate homopolymer radical polymr
- IT Vinyl compounds, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polymers, sulfonate-containing; vinyl polymers containing sulfone groups
with good film formability and ion exchange capacity for polymer
electrolytes, polymer electrolyte membranes,
and fuel cells)
- IT Polymerization catalysts
(radical; vinyl polymers containing sulfone
groups with good film formability and ion exchange capacity for
polymer electrolytes, polymer electrolyte
membranes, and fuel cells)
- IT Fuel cells
(solid electrolyte; vinyl polymers containing sulfone
groups with good film formability and ion exchange capacity for
polymer electrolytes, polymer electrolyte
membranes, and fuel cells)
- IT Membranes, nonbiological
Polymer electrolytes
(vinyl polymers containing sulfone groups with good film formability
and ion exchange capacity for polymer electrolytes,
polymer electrolyte membranes, and fuel cells)
- IT 2997-92-4, 2,2'-Azobis(2-amidinopropane) dihydrochloride
RL: CAT (Catalyst use); USES (Uses)
(polymerization initiator; vinyl polymers containing
sulfone groups with good film formability and ion

exchange capacity for polymer electrolytes, polymer electrolyte membranes, and fuel cells)

IT 50861-80-8P, Sodium allylsulfonate homopolymer 95735-01-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(vinyl polymers containing sulfone groups with good film formability and ion exchange capacity for polymer electrolytes, polymer electrolyte membranes, and fuel cells)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2003:719543 HCAPLUS Full-text

DOCUMENT NUMBER: 139:248013

TITLE: Manufacture of proton-conducting fuel cell electrolyte membrane having reduced methanol permeability

INVENTOR(S): Kiefer, Joachim; Uensal, Oemer; Calundann, Gordon; Crivello, James

PATENT ASSIGNEE(S): Celanese Ventures GmbH, Germany

SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003074597	A1	20030912	WO 2003-EP2397	20030304
W: BR, CA, CN, JP, KR, MX, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
DE 10209685	A1	20030918	DE 2002-10209685	20020306
DE 10210499	A1	20030925	DE 2002-10210499	20020311
CA 2478530	A1	20030912	CA 2003-2478530	20030304
EP 1483316	A1	20041208	EP 2003-743390	20030304
EP 1483316	B1	20070919		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
JP 2005519428	T	20050630	JP 2003-573059	20030304
CN 1639239	A	20050713	CN 2003-805300	20030304
CN 1277869	C	20061004		

AT 373690	T	20071015	AT 2003-743390	20030304
ES 2292993	T3	20080316	ES 2003-743390	20030304
US 20050118477	A1	20050602	US 2005-506387	20050125
PRIORITY APPLN. INFO.:			DE 2002-10209685	A 20020306
			DE 2002-10210499	A 20020311
			WO 2003-EP2397	W 20030304

AB A title membrane was manufactured by (A) swelling a polymer film with a liquid comprising vinylsulfonic acid and (B) polymerization of the vinylsulfonic acid present in the liquid used in step (A). For example, heating aqueous solution containing vinylsulfonic acid (obtained by acidification of Na vinylsulfonate with acidic ion exchanger) and vinylphosphonic acid for 1 h at 70°, adding CN-120 (epoxy acrylate) and Irgacure 184, heating the solution for 30 min at 70°, immersing a polybenzimidazole film in the mixture and heating for 3 h at 80°, placing the resulting film between transparent polypropylene (PP) films, irradiating both sides of the laminate and separating PP films gave a title membrane. The typical weight gain of the membrane was 350%.

IT 596130-67-5P, CN 120-Vinylphosphonic acid-Vinylsulfonic acid copolymer 596130-68-6P, CN 120-Styrenesulfonic acid-Vinylphosphonic acid copolymer
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (membrane; manufacture of vinylsulfonic acid copolymer proton-conducting fuel cell electrolyte membrane)

RN 596130-67-5 HCAPLUS

CN Phosphonic acid, ethenyl-, polymer with CN 120 and ethenesulfonic acid (9CI) (CA INDEX NAME)

CM 1

CRN 163206-65-3
 CMF Unspecified
 CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 1746-03-8
 CMF C2 H5 O3 P

CM 3

CRN 1184-84-5
CMF C2 H4 O3 S

RN 596130-68-6 HCAPLUS
 CN Phosphonic acid, ethenyl-, polymer with CN 120 and
 ethenylbenzenesulfonic acid (9CI) (CA INDEX NAME)

CM 1

CRN 163206-65-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

CM 3

CRN 1746-03-8
CMF C2 H5 O3 P

IC ICM C08J007-16
 ICS H01M008-10; C08J005-22
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 35, 38
 ST polyvinylsulfonic acid polybenzimidazole film proton conducting
 electrolyte membrane manuf; polybenzimidazole film
 vinylsulfonic vinylphosphonic acid polymer fuel

cell membrane; proton conducting membrane manuf vinylsulfonic acid
epoxy acrylate polymer

IT Polybenzimidazoles
RL: TEM (Technical or engineered material use); USES (Uses)
(films; manufacture of vinylsulfonic acid copolymer proton-conducting
fuel cell electrolyte membrane)

IT Fuel cell electrolytes
Fuel cell separators
(manufacture of vinylsulfonic acid copolymer proton-conducting fuel
cell electrolyte membrane)

IT 596130-67-5P, CN 120-Vinylphosphonic acid-Vinylsulfonic
acid copolymer 596130-68-6P, CN 120-Styrenesulfonic
acid-Vinylphosphonic acid copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered
material use); PREP (Preparation); USES (Uses)
(membrane; manufacture of vinylsulfonic acid copolymer
proton-conducting fuel cell electrolyte membrane)

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS
RECORD (6 CITINGS)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

=> d ibib abs hitstr hitind 118 1-3

L18 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1997:609072 HCAPLUS Full-text

DOCUMENT NUMBER: 127:263428

ORIGINAL REFERENCE NO.: 127:51453a,51456a

TITLE: Surface modification of
poly(tetrafluoroethylene) film by
plasma graft polymerization of sodium
vinylsulfonate

AUTHOR(S): Inagaki, N.; Tasaka, S.; Goto, Y.

CORPORATE SOURCE: Laboratory of Polymer Chemistry, Faculty of
Engineering, Shizuoka University, Hamamatsu,
432, Japan

SOURCE: Journal of Applied Polymer Science (1997),
66(1), 77-84
CODEN: JAPNAB; ISSN: 0021-8995

PUBLISHER: Wiley

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Poly(tetrafluoroethylene) (PTFE) surface was modified by the graft
polymerization of sodium vinylsulfonate, and the chemical composition of the
graft-polymerized PTFE surface was analyzed by XPS. Peroxides were formed on
the PTFE surface by a combination procedure of argon plasma irradiation and
air exposure, and the graft polymerization of sodium vinylsulfonate was
initiated by the peroxide groups at 65-80°C. The peroxide concentration is 3×10^{13} to 5×10^{13} nos./cm². The average d.p. of the graft polymers was 3.4
+ 103. The graft polymer is distributed over the PTFE surface, but part of
the PTFE surface remains uncovered. The coverage with the graft polymer is
43%. The PTFE surface graft polymerized with sodium vinylsulfonate was
somewhat hydrophilic, but the hydrophilicity was lower than that of the PTFE
surface modified by plasma treatment.

IT 188578-14-5P, Sodium vinylsulfonate-tetrafluoroethylene
graft copolymer

RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

(surface modification of PTFE film by plasma graft
polymerization of sodium vinylsulfonate)

RN 188578-14-5 HCAPLUS

CN Ethenesulfonic acid, sodium salt, polymer with tetrafluoroethene,
graft (9CI) (CA INDEX NAME)

CM 1

CRN 3039-83-6

CMF C2 H4 O3 S . Na



CM 2

CRN 116-14-3

CMF C2 F4



CC 37-4 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

IT Polymerization

Polymerization

(graft, plasma; surface modification of PTFE film by
plasma graft polymerization of sodium vinylsulfonate
)

IT Fluoropolymers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

(graft; surface modification of PTFE film by plasma
graft polymerization of sodium vinylsulfonate)

IT Peroxides, preparation

RL: PNU (Preparation, unclassified); PREP (Preparation)
(radicals; surface modification of PTFE film by plasma
graft polymerization of sodium vinylsulfonate in
relation to formation of)

IT Plasma

(surface modification of PTFE film by plasma graft
polymerization of sodium vinylsulfonate in argon
plasma)

IT Contact angle

(surface modification of PTFE film by plasma graft
polymerization of sodium vinylsulfonate in relation to
contact angle of water)

IT Polymer morphology

(surface; surface modification of PTFE film by plasma
graft polymerization of sodium vinylsulfonate in

relation to)
IT 188578-14-5P, Sodium vinylsulfonate-tetrafluoroethylene
graft copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(surface modification of PTFE film by plasma graft
polymerization of sodium vinylsulfonate)
IT 7440-37-1, Argon, uses
RL: NUU (Other use, unclassified); USES (Uses)
(surface modification of PTFE film by plasma graft
polymerization of sodium vinylsulfonate in argon
plasma)
IT 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(surface modification of PTFE film by plasma graft
polymerization of sodium vinylsulfonate in relation to
contact angle of water)
OS.CITING REF COUNT: 34 THERE ARE 34 CAPLUS RECORDS THAT CITE THIS
RECORD (34 CITINGS)
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L18 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1997:225292 HCAPLUS Full-text

DOCUMENT NUMBER: 126:251832

ORIGINAL REFERENCE NO.: 126:48689a,48692a

TITLE: Surface modification of
poly(tetrafluoroethylene) film by
plasma graft polymerization of sodium
vinylsulfonate

AUTHOR(S): Inagaki, N.; Tasaka, S.; Goto, Y.

CORPORATE SOURCE: Lab. Polymer Chem., Shizuoka Univ., Hamamatsu,
432, Japan

SOURCE: Polymer Preprints (American Chemical Society,
Division of Polymer Chemistry) (1997), 38(1),
1065-1066

CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer
Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The PTFE surface was modified in 2 steps: the formation of peroxides on the
PTFE surface by the application of Ar plasma and then graft polymerization by
Na ethenesulfonate with the peroxide groups. The peroxide concentration was
(3-5) + 10-13/cm² and the average d.p. of the grafted polymer was 3.4 + 10³,
with grafting occurring at 65-80°. The coverage of graft polymer was 43%.

IT 188578-14-5P, Sodium vinylsulfonate-tetrafluoroethylene
graft copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

(surface modification of PTFE by plasma graft polymerization
with sodium vinylsulfonate)

RN 188578-14-5 HCAPLUS

CN Ethenesulfonic acid, sodium salt, polymer with tetrafluoroethene,
graft (9CI) (CA INDEX NAME)

CM 1

CRN 3039-83-6

CMF C2 H4 O3 S . Na



CM 2

CRN 116-14-3

CMF C2 F4



- CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 35
- ST PTFE graft polymn plasma vinylsulfonate
- IT Polymerization
Polymerization
(graft, plasma, surface; surface modification of PTFE by plasma
graft polymerization with sodium vinylsulfonate)
- IT Fluoropolymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(surface modification of PTFE by plasma graft polymerization
with sodium vinylsulfonate)
- IT 188578-14-5P, Sodium vinylsulfonate-tetrafluoroethylene
graft copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(surface modification of PTFE by plasma graft polymerization
with sodium vinylsulfonate)

L18 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1983:225247 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 98:225247
ORIGINAL REFERENCE NO.: 98:34087a,34090a
TITLE: Photographic photosensitive silver halide
materials
INVENTOR(S): Ogawa, Masashi; Ishigaki, Kunio; Iwasaki,
Nobuyuki; Nakamura, Taku
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd. , Japan
SOURCE: Ger. Offen., 52 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 3223621	A1	19830113	DE 1982-3223621	198206 24
DE 3223621	C2	19910912		
JP 57212427	A	19821227	JP 1981-97998	198106 24
JP 61035539	B	19860813		
GB 2103817	A	19830223	GB 1982-18354	198206 24
GB 2103817	B	19841219		
US 4508818	A	19850402	US 1984-592763	198403 26
PRIORITY APPLN. INFO.:			JP 1981-97998	A 198106 24
			US 1982-391663	A1 198206 24

AB Photog. films having improved mech. characteristics and which give decreased amts. of developer sludge are described. These films, which are especially useful for development by automatic development devices, consist of a support, a photosensitive gelatin-Ag halide emulsion layer, a 1st nonphotosensitive layer with a melting time that is the same or higher than the melting time of the gelatin-Ag halide emulsion layer, and a 2nd nonphotosensitive layer that has a melting time that is higher than that of the 1st nonphotosensitive layer. The ratio between the melting times of the outermost layer and the gelatin-Ag halide emulsion is >3 and <6. Thus, upon both sides of a subbed poly(ethylene terephthalate) were coated a gelatin-Ag(Br,I) (2 mol. % I-) emulsion layer containing 1-phenyl-5-mercaptotetrazole and 4-hydroxy(1,3,3a,7)tetraazaindene as antifoggants and 1,2-bis(vinylsulfonylacetamido)ethane (0.40 mmol/100 g gelatin) as hardener, a gelatin interlayer containing N-oleoyl-N-methyltaurine Na salt as a coating aid and Na acrylamido-2-methylpropanesulfonate-2-[3-(vinylsulfonyl)propionyloxy]ethyl acrylate copolymer (0.9 mequiv./100 g gelatin) as hardener, and a gelatin protective layer containing the above-mentioned coating aid, poly(Me methacrylate) as matting agent, and 2-[3-(chloroethylsulfonyl)propionyloxy]ethyl acrylate-Na acrylamido-2-methylpropanesulfonate copolymer (1.8 mequiv./100 g gelatin) as hardener. The resultant film showed a melting time of the 1st and emulsion layers (0.2 N NaOH; 60°) of 328 and 39 s, resp., a film scratch resistance of 53 g after immersion in 35° developer for 25 s, no reticulation upon development at 35° in an automatic developer, no visible sludge formation in the fixer after processing, no film soiling after <200 sheets were processed, and only 95 mg of dissolved gelatin/100 cm³ of developer solution vs. 36 and 36 s, 50 g, no reticulation, visible sludge formation in the fixer, film soiling after only 25 sheets were processed, and 210 mg of dissolved gelatin/100 cm³ of developer solution for a control containing no hardeners in the interlayer and top layer.

IT 85899-51-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and photog. application of)

RN 85899-51-0 HCAPLUS

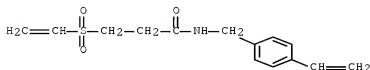
CN 1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, monosodium salt, polymer with

N-[(4-ethenylphenyl)methyl]-3-(ethenylsulfonyl)propanamide (9CI)
(CA INDEX NAME)

CM 1

CRN 85888-79-5

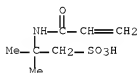
CMF C14 H17 N O3 S



CM 2

CRN 5165-97-9

CMF C7 H13 N O4 S . Na



● Na

IC G03C001-30

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST film photog polymer hardener; acrylic polymer photog hardener

IT Photographic development
(of films containing polymer hardener, sludge formation in)

IT Photographic processing
(of films containing polymer hardening agent, sludge formation in)

IT 15214-89-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(polymerization of, with [(vinylsulfonyl)propionyloxy]ethyl acrylate)

IT 85899-33-8P 85899-51-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and photog. application of)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr hitind 120 1-12

L20 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1997:164454 HCAPLUS Full-text
TITLE: Surface modification of
poly(tetrafluoroethylene) film by
plasma graft polymerization of sodium
vinylsulfonate.
AUTHOR(S): Inagaki, Norihiro; Tasaka, Shigeru; Goto,
Yoh-ichiro
CORPORATE SOURCE: Faculty Engineering, Shizuoka University,
Hamamatsu, 432, Japan
SOURCE: Book of Abstracts, 213th ACS National Meeting,
San Francisco, April 13-17 (1997),
POLY-530. American Chemical Society:
Washington, D. C.
CODEN: 64AOAA
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB PTFE surface was modified by the graft polymerization of sodium vinylsulfonate,
and the chemical composition of the graft-polymerized PTFE surface was
analyzed by XPS. Peroxides acted as an initiator for the graft polymerization
were formed on the PTFE surface by a combination procedure of the argon plasma
irradiation and the air exposure, and the graft polymerization of sodium
vinylsulfonate was initiated at 65 - 80°C from the peroxide groups. The
peroxide concentration is 3 - 5 + 10⁻¹³ nos./cm². The graft polymerization
was ascertained by the weight increase and appearance of C1s spectrum at 285.0
eV (CH₂ and CH groups) and S2p spectrum at 168.4 and 169.8 eV (SO₃- groups).
An average d.p. of the graft polymers was 3.4 + 103. The graft polymer does
not distribute over all PTFE surface, but a part of the PTFE surface comes out
the surface. The coverage of the PTFE surface with the graft polymer is 43 %.

L20 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1995:982767 HCAPLUS Full-text
DOCUMENT NUMBER: 124:120309
ORIGINAL REFERENCE NO.: 124:22353a,22356a
TITLE: Polyurethane-based coating compositions for
plastic substrates
INVENTOR(S): Inuyama, Akitomo; Myazaki, Hirotooshi
PATENT ASSIGNEE(S): Kuraray Co, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 07247463	A	19950926	JP 1994-64392	199403 09
			<--	
PRIORITY APPLN. INFO.:			JP 1994-64392	199403 09
			<--	

AB Title compns. containing polyurethanes, sulfonic acid-substituted poly(vinyl alc.), crosslinking agents, organic fillers, and inorg. fillers are applied onto organic polymer substrates, especially, fluoropolymers, to give surfaces with improved affinity to printing inks, toners, etc. Thus, a dispersion prepared from U-Pearl (I, urea-HCHO copolymer filler), Snowtex C (II), and HM-N 04 (III, vinylsulfonic acid-polymerized PVA) in aqueous MeOH was mixed with glyoxal (IV), polyethylenimine (V), Megafac F 177 (antifoamer), and TSP 202 Medium (VI, polyurethane) to give title composition containing I 13.9, II 1.5, III 15.4, IV 1.5, V 9.6, and VI 57.8 parts, which was applied onto Excelar 2000 [poly(vinyl fluoride)] film and dried to give a coating showing good adhesion and water resistance.

IC ICM C09D175-04
ICS C08F216-06; C08F216-14; C09D129-04

ICI C08F216-06, C08F216-14

CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38

IT 25038-71-5, Ethylene-tetrafluoroethylene copolymer
RL: MSC (Miscellaneous)
(films, substrates; coatings containing polyurethanes, sulfonic acid-modified poly(vinyl alc.), and (in)organic fillers for polymer substrates)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L20 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1995:973000 HCAPLUS Full-text

DOCUMENT NUMBER: 124:69602

ORIGINAL REFERENCE NO.: 124:12805a,12808a

TITLE: Electrogeneration of polypyrrole in presence of polyvinylsulfonate. Kinetic study
Otero, T. F.; Olazabal, V.

AUTHOR(S):

CORPORATE SOURCE: Dep. Ciencia Tecnologia Polimeros, Lab. Electroquimica, San Sebastian, 20080, Spain

SOURCE: Electrochimica Acta (1996), 41(2), 213-20
CODEN: ELCAAV; ISSN: 0013-4686

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A voltammetric study of a Pt electrode in pyrrole-polyvinylsulfonate (PVS) aqueous solns., showing different concns. of the polyelectrolyte was performed. Potential range for the composite (polypyrrole-PVS) reversible redox behavior for its passivation, and for the water discharge were studied by voltammetry. The electropolymerization of composite films of polypyrrole-polyvinylsulfonate was performed under a constant potential of 800 mV from aqueous solns. Parallel kinetics through ex-situ microgravimetric determination of the dry film wts., through elec. charges consumed during the electropolymerization, and through elec. charge consumed during the electropolymerization, and through elec. charge stored in the electroactive films were obtained. The polymerization mechanism change along the polymerization time, giving low current efficiencies and low storage of charge per g of polymer.

CC 72-2 (Electrochemistry)
Section cross-reference(s): 35, 36

IT 9002-97-5, Poly(sodium vinylsulfonate)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(electrochem. polymerization kinetics of pyrrole on Pt in aqueous solution containing sodium polyvinylsulfonate)

OS.CITING REF COUNT: 28 THERE ARE 28 CAPLUS RECORDS THAT CITE THIS

RECORD (28 CITINGS)

L20 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 1990:583101 HCAPLUS Full-text
 DOCUMENT NUMBER: 113:183101
 ORIGINAL REFERENCE NO.: 113:30805a,30808a
 TITLE: Solid electrolytic capacitor having
 poly(vinylsulfonic acid) or sulfonated
 poly(vinyl alcohol) as dopant and its
 manufacture
 INVENTOR(S): Ozaki, Junji; Kudo, Yasuo; Tsuchiya, Soji;
 Kojima, Toshikuni; Yoshimura, Susumu; Kawamura,
 Kenji
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02153516	A	19900613	JP 1988-307379	198812 05
			<--	
JP 2814502	B2	19981022		
PRIORITY APPLN. INFO.:			JP 1988-307379	198812 05
			<--	

AB Claimed are (a) an electrolytic capacitor having a dielec. oxide coated film of a valve metal anode and a solid electrolyte comprising polypyrrole, polythiophene, or polyfuran containing the title dopant and (b) its manufacture comprising electrolytic polymerization of pyrrole, thiophene, or furan in the presence of a supporting electrolyte having poly(vinylsulfonic acid) or sulfonated poly(vinyl alc.) as an anion in water, acetonitrile, propylene carbonate, or γ -butyrolactone on a MgO layer formed on a dielec. oxide film of a valve metal anode under charging by using an auxiliary anode set on the MgO layer. Thus, an Al anode coated with a chemical-formed oxide dielec. film was impregnated with aqueous Mn nitrate and heated to give a MnO2 interlayer coating, which was chemical-formed and overcoated with polypyrrole containing poly(sodium vinylsulfonate) by electrolytic polymerization in water. A solid electrolytic capacitor from the unit described showed small leakage current and retention of characteristics under moist condition at high temperature

IC ICM H01G009-02
 ICS C08F008-36; C08G061-12
 CC 76-10 (Electric Phenomena)
 IT 1313-13-9, Manganese dioxide, uses and miscellaneous
 RL: USES (Uses)
 (interlayer coating, between dielec. valve metal oxide
 film and electrolytic polymerization-deposited elec.
 conductor film, for solid electrolytic capacitor)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS
 RECORD (1 CITINGS)

ACCESSION NUMBER: 1989:66826 HCAPLUS Full-text
DOCUMENT NUMBER: 110:66826
ORIGINAL REFERENCE NO.: 110:10873a,10876a
TITLE: Organic polymer matting agent or photographic films
INVENTOR(S): Kuraki, Yasuo
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63216046	A	19880908	JP 1987-50684	19870305

PRIORITY APPLN. INFO.: <--
JP 1987-50684
19870305

<--
AB The photog. film has the surface layer containing matting agent particles having a diameter 0.5-20 μ m comprising a water-insol. organic polymer prepared by polymerizing a compound containing an ionizable group having a $P_{ka} < 4$ in water at 25°. Potassium vinylsulfonate was polymerized with Et methacrylate to give the matting agent particles. The matting agent particles improved stability in a coating dispersion that provides a surface layer with an improved smoothness.
IC ICM G03C001-76
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST polymer matting agent photog film
IT Photographic films
(matting agent, from copolymers containing sulfonate or sulfonic acid groups)

L20 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1987:516087 HCAPLUS Full-text
DOCUMENT NUMBER: 107:116087
ORIGINAL REFERENCE NO.: 107:18831a,18834a
TITLE: Electrosynthesis of electroactive polymer films
AUTHOR(S): LaCroix, Jean Christophe; Diaz, A. F.
CORPORATE SOURCE: Almaden Res. Cent., IBM, San Jose, CA, 95120-6099, USA
SOURCE: Studies in Organic Chemistry (Amsterdam) (1987), 30(Recent Adv. Electroorg. Synth.), 343-52
CODEN: SOCHDQ; ISSN: 0165-3253
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In strong acid solns., the extent of electrochem. redox reaction in electroactive polyaniline (I) films was dependent on t (time) and on the movement of a front across the thickness of the film, while in weak acids, the electrochem. redox reaction had a $t^{1/2}$ dependence and was dependent on the diffusion of ions in the film. I was also electroactive in organic solvents,

and voltammograms with well defined waves were obtained in solns. containing both organic salt and protic acid. Electroactive polymer blends were prepared by polymerizing aniline on a Pt electrode coated with PMMA and/or poly(acrylic acid).

CC 35-8 (Chemistry of Synthetic High Polymers)

IT 1493-13-6, Triflic acid 7647-01-0, Hydrochloric acid, reactions
7664-39-3, Hydrofluoric acid, reactions 7664-93-9, Sulfuric acid,
reactions 7697-37-2, Nitric acid, reactions 7789-21-1,
Fluorosulfonic acid 26101-52-0, Poly(vinylsulfonic acid)

RL: USES (Uses)

(electrochem. polymerization of aniline in, redox potential in relation to)

L20 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1978:580975 HCAPLUS Full-text

DOCUMENT NUMBER: 89:180975

ORIGINAL REFERENCE NO.: 89:28121a,28124a

TITLE: Cation exchange membranes

INVENTOR(S): Seida, Toru; Takahashi, Kenji; Asami, Shunichi;
Shimizu, Akihiko

PATENT ASSIGNEE(S): Toyo Soda Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 53071692	A	19780626	JP 1976-147088	19761209
JP 58058366	B	19831224		
PRIORITY APPLN. INFO.:			JP 1976-147088	A 19761209

AB Membranes useful as diaphragms for electrolytic cells were prepared from CF₂:CFOCF₂CF(CF₃)OCF₂CF₂SO₂F-p-aminostyrene-tetrafluoroethylene- vinylsulfonyl chloride copolymer [68026-93-7] or a similar fluorocopolymer. Thus, a CF₂:CFOCF₂CF(CF₃)OCF₂CF₂SO₂F- tetrafluoroethylene copolymer (I) film was contacted with a solution of p-aminostyrene on 1 side at 35° for 10 h, washed with Me₂SO and CCl₄, impregnated with a solution containing 0.01% Bz₂O₂ and vinylsulfonyl chloride on the reaction side, polymerized between glass plates at 85° for 15 h, washed with Me₂SO to remove the homopolymer, dried, hydrolyzed, immersed in MeOH for 15 min, and heated between glass plates at 80° for 10 h to prepare a membrane having cation transport number 95%, compared with 83% for a similar membrane prepared from I.

IC C08J005-22

CC 37-3 (Plastics Fabrication and Uses)

L20 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1975:580538 HCAPLUS Full-text

DOCUMENT NUMBER: 83:180538

ORIGINAL REFERENCE NO.: 83:28373a,28376a

TITLE: Polymers from acrylonitrile polymerized in the presence of vinylsulfone dyes

AUTHOR(S): Batty, N. S.; Guthrie, J. T.
CORPORATE SOURCE: Dep. Color Chem. Dyeing, Univ. Leeds, Leeds, UK
SOURCE: Polymer (1975), 16(5), 370-6
CODEN: POLMAG; ISSN: 0032-3861
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mol. wts., the nature of chromophore-backbone links, the reactivity ratios, and suitability as pigments were determined for 3 copolymers of acrylonitrile with blue, red, and yellow vinylsulfone dyes, e.g. acrylonitrile-Remazol Golden Yellow G copolymer (I) [56845-20-6]. The thermal stabilities of the polymers were similar to those of the corresponding dyes. Highly colored fibers with similar phys. properties to Courtelles were spun from mixts. of 25 weight % I and 75 weight % Courtelles but the light fastness of I was less than when incorporated in a paint. Films made from the polymers were initially tough and flexible and became brittle after evaporation of the last traces of solvent.
CC 37-3 (Plastics Fabrication and Uses)
IT Reactivity ratio in polymerization
(of acrylonitrile with vinylsulfone dyes)
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
L20 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2009 ACS ON STN
ACCESSION NUMBER: 1975:141255 HCAPLUS Full-text
DOCUMENT NUMBER: 82:141255
ORIGINAL REFERENCE NO.: 82:22583a,22586a
TITLE: Porous film
INVENTOR(S): Mizutani, Yukio; Yamane, Reichi; Nishimura, Masakatsu
PATENT ASSIGNEE(S): Tokuyama Soda Co., Ltd.
SOURCE: Jpn. Tokkyo Koho, 5 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 49037029	B	19741004	JP 1969-4076	196901 22

PRIORITY APPLN. INFO.: <--
JP 1969-4076
196901
22
<--

AB Porous films having a uniform pore diameter of 1-1000 mμ were obtained by treating a heterogenous cation exchanger film with Fe³⁺ ions in H₂O₂ [7722-84-1] solution. In an example, 6:94 divinylbenzene-styrene polymer was polymerized with vinyl chloride and sulfonated to give a 0.19 mm-thick cation exchanger [9074-63-9] film with an exchange capacity of 1.75 mequiv/g dry resin. The film was soaked with 0.15 M FeCl₃ [7705-08-0] and treated with 5-6% H₂O₂ for 1 hr to give a 0.155 mm-thick film with pore ratio 50.0%, water permeation coefficient 1.19 × 10⁻¹³ and pore radius 20 mμ.
IC B01D; B44D
CC 37-3 (Plastics Fabrication and Uses)
ST semipermeable cation exchanger membrane; vinyl chloride copolymer film; divinylbenzene styrene

copolymer film; iron treated cation exchanger

L20 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 1966:105387 HCAPLUS Full-text
 DOCUMENT NUMBER: 64:105387
 ORIGINAL REFERENCE NO.: 64:19918d-e
 TITLE: Copolymer ion-exchange membranes
 INVENTOR(S): Chen, William K.
 PATENT ASSIGNEE(S): American Machine & Foundry Co.
 SOURCE: 4 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 3247133		19660419	US 1962-235529	195606 18
			--	
PRIORITY APPLN. INFO.:			US	195606 18
			--	

AB Styrenes, vinylpyridine, vinylcarbazole, vinyl sulfones, and acrylic acids are graft polymerized to an inert-chain polymer film in the presence of high-energy ionizing radiation, and the copolymers obtained (which contain Ph groups in the branch chains) are sulfonated or chloromethylated and treated with a tertiary amine, to give materials which can be stored in the dry state. Thus, a 4-mil thick polyethylene film is kept 30 min. in styrene, the mixture is irradiated 5 h. with 60Co to give a total dose of .apprx.1.5 + 106 roentgens, and the film is removed, washed with C6H6, and dried to give a copolymer (21% styrene) (I), tensile strength .apprx.2000 psi. I is sulfonated .apprx.40 min., kept in CCl4, washed with H2O, and heated .apprx.15 min. at 60-70° in .apprx.20% NaOH to give a membrane, wet tensile strength .apprx.1150 psi.; the H+ form has a dry capacity of 1.72 meq./g. and a wet capacity of 1.06 meq./g., and the Na+ form has a sp. conductivity (equilibrated in water) of 11 + 10-3 ohm-1/cm.

INCL 260002100

CC 48 (Plastics Technology)

IT Ion-exchanging substances

(bipolar, from styrene or vinylpyridine graft polymers on ethylene polymer films)

IT Radiation and Radiation effects

(polymerization (graft) by, of styrene or vinylpyridine on ethylene polymer films for ion-exchange membranes)

IT Gamma rays

(polymerization, of styrene or vinylpyridine on ethylene polymer films for ion-exchange membranes)

IT Sulfones

(vinyl, polymerization (graft) of, on vinyl compound polymers, and ion-exchanging membranes therefrom)

IT X-rays

(vinylpyridine polymerization on ethylene polymer films by, for ion-exchange membranes)

IT 183748-02-9, Electron

(vinylpyridine polymerization on ethylene polymer films by, for ion-exchange membranes)

IT 9003-53-6, Styrene polymers
(with ethylene-polymer films, graft,
ion-exchange membranes by chloromethylation or sulfonation)
OS.CITING REF COUNT: 14 THERE ARE 14 CAPLUS RECORDS THAT CITE THIS
RECORD (14 CITINGS)

L20 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1965:455297 HCAPLUS Full-text

DOCUMENT NUMBER: 63:55297

ORIGINAL REFERENCE NO.: 63:10126d-e

TITLE: Structure of ion-exchange resin membranes
obtained from a poly(vinyl chloride) film

AUTHOR(S): Savenko, O. D.; Gudkova, L. P.; Shostak, F. T.
SOURCE: Izvestiya Akademii Nauk Kazakhskoi SSR, Seriya
Khimicheskaya (1965), 15(1), 94-6

CODEN: IKAKAK; ISSN: 0002-3205

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The x-ray examination of the poly(vinyl chloride) membranes showed the
presence of the amorphous and crystalline phases. The sulfonation of the
polymers or their impregnation with styrene followed by polymerization leads
to an increase in membrane crystallinity.

CC 48 (Plastics Technology)

IT Membranes

(base-exchanging, from sulfonated vinyl chloride polymer
films alone and impregnated with styrene and subsequent
polymerization thereof)

IT Base-exchanging substances or Cation-exchanging substances
(membranes, from sulfonated vinyl chloride polymer
films alone and impregnated with styrene with subsequent
polymerization thereof)

IT Polymerization

(of styrene, in sulfonated vinyl chloride
polymer films, base-exchange membrane
properties in relation to)

IT 100-42-5, Styrene

(vinyl chloride sulfonated polymer film
impregnated by, and subsequent polymerization thereof,
base-exchanging membrane properties and)

L20 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1965:37399 HCAPLUS Full-text

DOCUMENT NUMBER: 62:37399

ORIGINAL REFERENCE NO.: 62:6617f-g

TITLE: Reducing the hydrophobic properties of polymers

PATENT ASSIGNEE(S): Imperial Chemical Industries Ltd.

SOURCE: 9 pp.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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NL 6402611		19640915	NL 1964-2611	196403 12
BE 645183				

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BE

FR 1393652

FR

GB 1004757

GB

PRIORITY APPLN. INFO.:

GB

196303

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AB Films and textile fabrics made from polyesters, polyamides, and polyolefins are treated, in the presence of an alkali, with divinyl sulfone and an aqueous solution or dispersion of a reactive polymer containing an OH, NH, or SH group. Thus, a fabric made from poly(ethylene terephthalate) fibers was impregnated with an aqueous solution containing poly(vinyl alc.) 3, a 50% aqueous solution of bis(β hydroxyethyl) sulfone, Na₂CO₃ 0.3, and H₂O 96.2 parts. The fabric was wrung out until it retained 50% liquid, based on its dry weight, dried at 80°, heated 2 min. at 180°, washed 5 min. in a solution containing 0.1% Na₂CO₃, and 0.1% nonionic detergent, washed with H₂O at 60°, and dried. The fabric had a reduced tendency to accumulate static electricity. This effect remained after washing. Similarly treated continuous nylon filaments also had an improved affinity for cellulose substantive dyes and optical bleaches.

IC D06M

CC 47 (Textiles)

IT Nylon

(dye affinity increase, elec.-charge prevention and hydrophobicity lowering by vinyl sulfone and reactive polymers)

IT Electric charge

(prevention of, on polymer films or synthetic fibers by reactive polymers and sulfones)

IT Dyeing

(properties, of nylon and other synthetic fibers, improvement by reactive polymers and vinyl sulfones)

IT Vinyl sulfone, homopolymer

(Dacron, nylon and propene polymer fiber and film hydrophobicity lowering by)

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